

Pre Calc Blitzzer Work Sheet  
Identities

Name \_\_\_\_\_

Prove the Following:

1) a)  $\frac{\sec x}{\tan x + \cot x} = \sin x$

b)  $\frac{\cot x + 1}{1 + \tan x} = \frac{\cot x - 1}{1 - \tan x}$

2) a)  $\tan^2 y (\cot^2 y + \cot^4 y) = \csc^2 y$       b)  $\cos^2 x + \cos^2 x \tan^2 x = 1$

3) a)  $\frac{1 + \sin a}{\cos a} = \frac{\cos a}{1 - \sin a}$

b)  $\sin^4 t - \cos^4 t = \frac{1}{\sec^2 t} - \frac{1}{\csc^2 t}$

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$$4) a) \frac{\sin \theta}{1 + \cos \theta} + \frac{1 + \cos \theta}{\sin \theta} = 2 \cos \theta \sec \theta$$

$$b) 1 + \frac{1}{\cos \theta} = \frac{\tan^2 \theta}{\sec \theta - 1}$$

$$5) \frac{\sin y - 1}{\sin y + 1} - \frac{\sin y + 1}{\sin y - 1} = 4 \sin y \sec^2 y$$

$$6) \frac{\tan^3 x + 1}{\tan x + 1} = \sec^2 x - \tan x$$